

FR 2,108,027

FR 2 108 027

---

Translated from French by the Ralph McElroy Translation Company  
910 West Avenue, Austin, Texas 78701 USA

Code: 5000-72774

REPUBLIC OF FRANCE  
NATIONAL INSTITUTE OF INDUSTRIAL PROPERTY  
PARIS  
FRENCH PATENT APPLICATION NO. 2,108,027  
First Publication

Int. Cl.: A 61 k 7/00  
Filing No.: 71.34657  
Filing Date: September 27, 1971, 3:37 p.m.  
Publication Date: BOPI "Listes" No. 19, May 12, 1972  
Priority  
Date: September 28, 1970  
Country: Italy  
No.: 30.292 A/70  
in the name of the applicant

## COSMETIC OR HYGIENIC PRODUCT

Applicant: Company known as: Curt Georgi  
Imes S.P.A., Italy

Representative: Cabinet L.A. de Boisse

The present invention concerning preparations for toiletry articles or similar articles pertains more particularly to a product whose applications include cosmetic and/or hygienic utilizations, as well as a method for its preparation. More particularly, the invention concerns an extract of sea urchin gonads (Echinoidea), a method for its preparation, and the utilization of this extract in compositions for cosmetic and/or hygienic use.

Products of the latter types include products for cosmetic use such as creams, emulsions, lotions, milks, powder dispersions, talcs, etc., as well as products for hygienic use such as soaps, detergents, shampoos, etc.

One of the oldest groups of living beings, and also one of the richest in vitality, possessing exceptional embryo-genetic properties, is the branch of the echinoderms which includes the echinoidea or sea urchins, which are well known inhabitants of our oceans because they attach themselves primarily to rocks in proximity to the low-water mark. Until now, the possibility of using them in cosmetology, as a source of raw materials which are active in human cosmetics or hygiene, has not been considered.

The applicant has conducted precise studies to prepare sea urchin extracts that are suitable for the above-mentioned purposes.

The method of the invention relates to the extraction of sea urchin gonads by the following protocols.

Sea urchins are opened by a mechanical system (with press, knives, etc.) or by a manual system; the yellow, orange, or reddish gonadal part is separated from the rest, and collected. These gonadal parts are placed in an extractor of the Soxhlet type or in another type of continuous or batch extractor, and they are extracted using one or more of the following solvents: alcohol, acetone, chloroform, methylene chloride, ethyl acetate, plant oils, isopropyl myristate, chlorinated hydrocarbons, benzene, toluene, xylene, and surfactants in aqueous vehicle substances.

The extraction process is carried out at pressures ranging from 1 to 20 absolute atmospheres and at temperatures ranging from -20°C to +200°C. It is preferable to carry out this step at ambient pressure, and at the boiling temperature of the solvent or mixture of solvents. In the first phase, the extract so obtained is concentrated, at atmospheric pressure or in a vacuum, by means of thin-film, vaporization, or heat-pump concentration devices, or by means of so-called "ball" or rotating evaporator concentration devices. By concentrating, a dense and pasty oil is obtained which constitutes the concentrated active extract containing a large number of active substances such as provitamin A, vitamin A, echinenone, pentaxanthine, steroids, organic iodine, and other biostimulating substances.

The concentrated active extract can be used as is, or preferably in a dispersion or dilution in various vehicle substances, for example isopropyl myristate, propylene glycol, ethyl alcohol at various concentrations, solvents suitable for use in cosmetics, waxes, fats, talcs, silicates, silica, natural gums such as gum arabic or gum tragacanth, and polyvinylpyrrolidone.

Using this dilution or dispersion, extracts are prepared in a fixed ratio by weight with reference to the quantity of sea urchins used for the extraction. For example, a 1:5 extract is an extract where 1 part by weight of extract originates from the extraction of 5 parts by weight of sea urchins.

When used in cosmetics, these extracts present a pronounced bioactivating and astringent effect. The extracts can be used directly, or in the form of appropriate compositions.

### Example 1

#### Preparation of the extract

100 kg of sea urchins are opened by mechanical knives or presses. The gonads are separated, and then extracted with a Soxhlet extractor with a capacity of 50 L, at a temperature of approximately 50°C, for approximately 8 h, the rate of evacuation through the siphon being equivalent to one complete evacuation per hour.

After extraction, the ethyl acetate is evaporated in a concentration device equipped with a condenser; in this manner, pure ethyl acetate and approximately 5 kg of a dense oily concentrate, which is free of ethyl acetate, are obtained.

One can dilute this yellow-red concentrate in 15 kg of isopropyl myristate, which produces 20 kg of a 1:5 lipophilic (fat-soluble) extract.

Another preparation which can be obtained is a 1:1 lipophilic extract formed from 5 kg of concentrate dissolved in 95 kg of isopropyl myristate.

On the other hand, one can also dilute 5 kg of concentrate in a hydrophilic vehicle such as propylene glycol, in the ratios indicated above for myristate, to produce water-soluble or hydrophilic 1:5 and 1:1 extracts, respectively.

### Example 2

The fat-soluble or water-soluble extracts are used in various vehicle substances, for applications to the skin to confer a revitalizing effect, for example by massaging, ointment application, etc. In this example, sea urchin extracts are mixed with a creamy or noncreamy emulsion, of the aqueous or oily type, consisting of the following phases: lipophilic phase, hydrophilic phase, preservatives, fragrances, and other ingredients, at doses varying from 0.1 to 99%.

This emulsion, cream, or milk, is applied topically with revitalizing and bioactivating results.

### Example 3

One dissolves the sea urchin extracts in lotions with varying alcohol content, to be applied topically to the skin or hair.

### Example 4

Sea urchin extracts are incorporated into detergent and foaming emulsions for foam baths.

### Example 5

Sea urchin extracts are incorporated into shampoos or lotions for hair, or in lacquers for hair, including aerosols.

The products come in contact with the hair, where they produce their specific detergent, tonic, or lacquering effect, while at the same time producing a revitalizing effect.

### Claims

1. Method for the preparation of an extract containing essentially a mixture of active substances such as provitamin A, vitamin A, echinenone, pentaxanthine, steroids, organic iodine, and other biostimulating substances, characterized in that sea urchin gonads are subjected to extraction in a solvent which can be alcohol, acetone, chloroform, methylene chloride, ethyl acetate, plant oils, isopropyl myristate, a chlorinated hydrocarbon, benzene, toluene, xylene, and a surfactant in an aqueous vehicle, or a mixture of these solvents, at a temperature between -20°C and +200°C, and at a pressure between 1 and 20 absolute atmospheres, followed, if necessary, by concentration of the extract obtained.
2. Method according to Claim 1, characterized in that the pressure is ambient pressure, and the temperature is the boiling temperature of the solvent or mixture of solvents.
3. Method according to Claim 1, characterized in that the extraction is carried out in a Soxhlet-type extractor.
4. Extract applicable to cosmetic and/or hygienic uses, characterized in that it is obtained by extracting sea urchin gonads by a method according to one of the preceding claims.
5. Composition for cosmetic and/or hygienic use, characterized in that it contains, as active ingredient, an extract according to Claim 4.